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The
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By J. L. IRWIN

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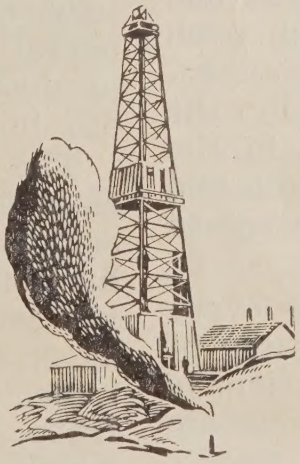

Alberta

Issued by THE DEPARTMENT OF TRADE & INDUSTRY
Published by THE PUBLICITY AND TRAVEL BUREAU
EDMONTON, ALBERTA

The
DEVELOPMENT OF ALBERTA'S OIL INDUSTRY IN 1942

By J. L. IRWIN*

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PROBLEMS which faced oil development throughout the world during the momentous year of 1942 were indeed many.

They were present in all oil producing countries, both in and out of war-zone territories, and were responsible for the tremendous decrease appearing in the annual world production total, which amounted to 170,225,000 bbls. (preliminary figures), a decrease which in no way pointed to an inability to produce, but rather to the placing of insuperable obstacles in the path of such production.

The major problem was one of transportation, which even overshadowed the tragic production losses caused by the scorched earth policies in the Dutch East Indies, Burma and the Maikop field of the western Caucasus.

Priorities in steel for every phase of the vast industry of war added new complications in the matter of securing certain types of equipment.

Under such conditions, the development of Alberta's oil was carried out throughout the year, which concluded with a total showing an increase over 1941 of approximately a quarter of a million barrels. Though not in keeping with the rather spectacular results of recent years, this increase, in consideration of the many problems which surrounded development, may perhaps be regarded as reasonable.

Alberta finished the year with a total of 227 producing wells, 197 in Turner Valley and 30 in other fields, in comparison with 198 (177 in Turner Valley and 21 in other fields) for 1941.

It finished also with a production total, which for the first time in Alberta's oil history, exceeded the ten million barrel mark, with an increased production over 1941 of 234,627 bbls.

The following tables present, as in former annual reviews, a comparative statement (production by months) of the past two years, showing daily averages, together with a general table, displaying annual totals from 1914 to 1942 inclusive, which, in its grand total, gives a picture of Alberta's contribution over a period of approximately 30 years, towards the oil industry of Canada.

**Statistician, Department of Lands and Mines*

COMPARATIVE MONTHLY STATEMENT
(Quantities in barrels)

	1941	1942	Increase or Decrease	Daily Average 1941	Daily Average 1942
January	787,469	862,284	+ 74,815	25,427	27,815
February	722,631	833,552	+110,921	25,808	29,770
March	835,006	908,463	+ 73,457	26,911	29,306
April	806,865	832,261	+ 25,396	26,896	27,742
May	827,102	876,732	+ 49,630	26,681	28,282
June	802,323	831,190	+ 28,867	26,744	27,706
July	853,915	845,013	— 8,902	27,545	27,258
August	853,563	846,635	— 6,928	27,534	27,310
September	855,778	800,861	— 54,917	28,526	26,695
October	853,600	841,363	— 12,237	27,535	27,141
November	842,650	823,056	— 19,594	28,089	27,435
December	867,741	841,860	— 25,881	27,991	27,156
TOTALS	9,908,643	10,143,270	+234,627	27,147	27,790

ANNUAL PRODUCTION
(Quantities in barrels)

1914-21	56,599
1922	15,853
1923	10,003
1924	14,049
1925	168,643
1926	219,598
1927	332,133
1928	489,531
1929	999,152
1930	1,433,844
1931	1,455,195
1932	917,622
1933	1,013,040
1934	1,265,940
1935	1,263,750
1936	1,320,442
1937	2,796,908
1938	6,742,039
1939	7,594,411
1940	8,495,207
1941	9,908,643
1942	10,143,270
TOTAL	56,655,872

Turner Valley.

Crude oil producing wells from Turner Valley's limestone to appear since June 16, 1936, the date of the first producer of crude from that formation in the Valley, are shown:

	Number of Crude Wells Brought in in Year	Total Number of Producing Crude Wells
1936	2	2
1937	22	24
1938	36	60
1939	34	94
1940	36	130
1941	47	177
1942	20	197

Reference was made in last year's Review to drilling in the area north of Turner Valley, stretching a distance of some 12 miles to the Sarcee Indian Reserve, in which 2 wells were being drilled, about 15 miles from the southwest of Calgary. This exploratory work, however, met with disappointing results. Adverse conditions were experienced in the new area, resulting in drilling being almost entirely halted, at least for the time being.

An interesting test well was started in Central Turner Valley when Devonian Test #1 was spudded November 26th, 1942. For some years now there has been considerable discussion as to Turner Valley's possibilities in the Devonian limestone. The present experiment should at last be able to answer that important question.

Major oil production from Alberta has been, and continues to be, secured from the Madison lime of Turner Valley. The contention for a long time has been that a test should be drilled beneath it to also tap the Devonian. If successful, crude oil recoveries could then be secured from both formations—and prospects for future production in the 20-mile field would become considerably advanced. The location of the Devonian Test is L.s.d. 2, sec. 25-19-3-w5th, which, in the last published map, appearing in the "Schedule of Wells Drilled For Oil and Gas to 1941", is shown as Royalite #66, for which the location was originally intended.

Several companies have combined with a view to financing this exploration into the unknown. At the close of 1942 the well was down to 3,576 ft. It will be an interesting well to watch.

To the Valley's major producing wells in the north end, specified in the last report, several new ones have been added. Amongst them are:

Atlas-British Dominion #2 and #3, which now designate, side by side, the present northerly limits of production. As anticipated, N.W.-H.B. #8, in the extreme south end, has become the new southern producing marker, extending the field a quarter-mile southwest.

Other Alberta Fields.

Production from oil fields outside of Turner Valley for 1942 show:

Field	Bbls.
Vermilion	63,793
Taber	29,819
Wainwright	14,510
Princess	10,478
Red Coulee	10,107
Tilley	5,718
Dina	2,780
Del Bonita	1,653
Lloydminster	477
TOTALS	139,335

In comparison with last year's production of 78,300 bbls. from fields outside of Turner Valley, this total for 1942 shows almost 100% increase.

Vermilion and Taber are mainly responsible for this performance. As stated in a preliminary (10 months) review of 1942, Vermilion field is developing into a producing area of considerable importance. A further quotation from this review reads as follows:

> The Vermilion field was discovered in 1939 and drilling became active in 1940 and 1941. Production is secured from a shallow horizon (Lower Cretaceous) at depths in the neighborhood of 1,800 to 1,900 feet. Drilling time is consequently short ,and in certain individual cases wells have been completed in 36 hours. The oil, which is a viscous product, has a gravity of from 14° to 20° A.P.I. Gas in some instances is in sufficient quantity to maintain flowing wells for a short time.
>
> The Vermilion product is of a classification which meets with the fuel oil demands of the railways. In this connection, a recent statement was published, a part of which reads as follows: "Have reported its use in locomotives highly satisfactory, in fact, 'the best we have used yet'."

Oil production from Vermilion field during the past two years has advanced in a manner which has been definitely encouraging. With an established market for its product, which is recovered by speedy drilling from shallow horizons, coupled with its brief but successful history, there is justification for the hope that this prairie oil field may develop into another major producing area within the province, of which there is now such urgent need.

Taber's rather spectacular advance, which, within the latter half of 1942 became sufficiently noticeable to place this area in second place amongst

Alberta's producing oil fields, outside of Turner Valley, is another satisfying development feature of 1942.

The performance of Taber-Province ※1 well, largest producer outside of Turner Valley, has been practically responsible for this event. A recent announcement in the press regarding a drilling program of 8 new wells in Taber area is no doubt a result of such performance. The current year may witness, therefore, further productivity from this new and welcome field in Southern Alberta.

Reports regarding the Ram River ※2 well test are awaited with interest. This area in the Foothills, about 100 miles west of Red Deer, contains in its structure a formation of Devonian limestone, which, at the well's location, is present from the surface down.

The well completed drilling some time ago. Delays in carrying out the test have been largely the result of weather conditions, coupled with extremely slow travelling through remote and rugged country. If production is established, many of those difficulties will no doubt quickly disappear. At the close of the year the arrival of needed equipment was stated to be on the way to the well, following which the long awaited and all important production test is to be made.

Significant Growth.

Growing production of Alberta's oil fields, outside of Turner Valley, is significant and of first importance. A year or so ago, such production was less than half of 1% of Turner Valley's total. In 1942, the figure rose to 1.37%. Whilst admitting that the difference between these totals is still a considerable one, the gap, nevertheless, is beginning at last to close.

Conservation Board.

The appointment of J. J. Frawley, K.C., to Chairman of The Petroleum & Natural Gas Conservation Board, and M. D. Kemp to Board Member took place during the year. Mr. Frawley's appointment fills the vacancy caused by Mr. Robert E. Allen, former Chairman, whose services were loaned to the United States Government by request of Mr. Harold L. Ickes, Co-ordinator, at Washington, D.C.

Bituminous Sand.

The disastrous fire at the Abasand plant at McMurray in the winter of 1941-42 caused serious delay in the important development work that was being carried out by this company in that area. The plant had just completed construction, and the production of crude oil, gasoline and diesel fuel oil was in operation, the production figures having been quoted in the last annual Oil Review.

Reconstruction, which was handicapped by such present problems as priorities of steel, etc., was completed by midsummer of 1942, and production was once again under way. From then to the end of November, 1942, production totals were given as follows:

Bituminous sand mined, 11,156 tons;

Crude oil recovered from same, 10,041 bbls.

CANADIAN OIL PRODUCTION

(Quantities in barrels)

	1941	1942	Increase or Decrease
Alberta	9,908,643	10,143,270	+241,627
New Brunswick	31,359	27,760 (a)	— 3,599 (a)
Ontario	160,238	150,000 (a)	— 10,238 (a)
N. W. Territories	23,664	82,324	+ 58,660
TOTALS	10,123,904	10,403,354 (a)	+279,450 (a)

(a)—Preliminary figures.

Only West Has Increase.

Increases in Canadian oil production for 1942, it will be noted, appear only in Alberta and the N.W.T. Alberta, as in previous years, was mainly responsible for increases in the Canadian annual total. Increased production in the North West Territories was, however, most noticeable.

It should be stated that the bulk of the 1942 total for the N.W.T. is in storage, with the wells sealed off, pending the time when transportation facilities can be arranged. A further production increase in this new and vital area for 1943 is anticipated.

BRITISH EMPIRE PRODUCTION

(Quantities in barrels)

Country—	1941	1942 (a)	Increase or Decrease (a)
Trinidad	21,150,000	27,375,000	+6,225,000
Canada	10,123,904	10,403,354	+ 279,450
Bahrein Island	7,070,000	7,800,000	+ 730,000
Burma	7,900,000	2,500,000	—5,400,000
Brunei	5,245,000	....	—5,245,000
India	2,245,000	2,500,000	+ 255,000
Sarawak	1,275,000	....	—1,275,000
TOTALS	55,008,904	50,578,354	—4,430,550

(a)—Preliminary figures.

The above production figures tell a grim and significant story. It is part of the general story dealing with the fate in 1942 of oil producing countries in the war zone. Brunei and Sarawak in Borneo were the first to go early in 1942; Burma and the Dutch East Indies to follow later. All were subjected to the scorched earth policies, which meant the deliberate destruction of millions of dollars worth of refinery equipment and field supplies, in a matter of weeks, or even days. It took many years to build up these areas to the high places they held in the economic structure of the civilized world. It may take many more to restore them—**but they will be restored,** following the day of victory, and will again resume their proper place in the industrial world.

It is the first year in which oil production within the Empire has ever shown a decline. With the destruction of development in Burma, Brunei and Sarawak, from which 12,000,000 bbls. of oil would otherwise have been produced, nothing but a decrease could have been expected. As a matter of fact, had it not been for the splendid production increase in Trinidad, aided by the smaller increases of Canada, Bahrein Island and India, the decline would have been infinitely greater.

Canada's second place within the Empire was a more noticeable one in 1942, with production of 20.5% of the Empire's total.

World Crude—1942.

World crude oil production in 1942 met with a sequence of tragic events.

The following production table appeared in the Oil & Gas Journal, Tulsa, Oklahoma, on Dec. 31st, 1942. The figures, in comparison with those of last year, show a production decrease of some 170,000,000 bbls., a result which, even early in the year, may perhaps have been anticipated:

ESTIMATED WORLD PRODUCTION
(Thousands of barrels)

Country—	1942	1941	Changes
United States	1,385,500	1,404,182	— 18,682
U. S. S. R. (1)	214,000	238,000	— 24,000
Venezuela	150,000	228,131	— 78,131
Iran	75,600	64,150	+ 11,450
Rumania	37,800	38,450	— 650
Mexico	37,000	42,705	— 5,705
Trinidad	27,375	21,150	+ 6,225
Argentina	23,275	21,765	+ 1,510
Iraq	14,600	10,000	+ 4,600
Peru	13,150	11,925	+ 1,225
Colombia	10,600	24,639	— 14,039
Canada	10,450	10,123	+ 327
Germany (2)	10,000	9,750	+ 250
Netherlands E. I. (3)	9,000	61,000	— 52,000
Egypt	8,000	7,800	+ 200
Bahrein Island	7,800	7,070	+ 730
Saudi Arabia	6,000	5,750	+ 250
Hungary	4,400	3,300	+ 1,100
Japan (4)	3,800	3,800	....
Burma	2,500	7,900	— 5,400
British India	2,500	2,245	+ 255
Ecuador	1,800	1,560	+ 240
Italy (5)	1,350	1,250	+ 100
Bolivia	300	275	+ 25
Others	200	205	— 5
TOTALS	2,056,900	2,227,125	—170,225

(1) Includes part of Sakhalin; (2) Includes Austria, Czecho-Slovakia, Poland, France; (3) Includes Sarawak, Brunei; (4) Includes part of Sakhalin, Formosa; (5) Includes Albania.

The above table, with an article by Stanley Norman, in the Tulsa Oil & Gas Journal, gives a somewhat disturbing picture regarding oil development tragedies which occurred through the year.

Another article in the same issue by J. P. O'Donnell, gives losses through scorched earth policies at 75,000,000 bbls., but the loss of 125,000,000 bbls. through lack of transportation facilities was even greater.

Lack of transportation affected the Venezuelan operations seriously with a decline of 78,000,000 bbls. Declines in the United States and Colombia were almost entirely due to the same cause.

Most tragic amongst the oil producing areas which had been compelled to use scorched earth policies were the islands of the Dutch East Indies. This tremendously productive area paid a toll in lost oil production of over 50,000,000 bbls., together with millions of dollars worth of highly specialized equipment.

It begins to look as if such terrible measures may no longer be necessary. With the dawn of 1943 the picture of the war is changing.

Russia is on a major offensive, the news from northern Africa spells success, and the Japs in the southwest Pacific have been uncomfortable for some considerable time.

What Lies Ahead?

What lies in store for world oil development in 1943 no man can say, beyond the fact that the general scene is unquestionably brighter than it was a year ago. It is to be fervently hoped that the terrible obstacles placed in the path of such development last year may never be experienced again.

To the northwest of Alberta a vast new empire is beginning to unfold. In one of the greatest and speediest engineering feats of all time, a 1,700-mile highway, running through its entire length, has been completed.

The new territory along the line of, and adjacent to, this great road, is said to contain tremendous wealth in coal, minerals, forests and water power.

In the post-war world which is coming, this new land will without question offer assistance in solving rehabilitation problems, which may perhaps be many.

Throughout this vast area, oil will be needed for every form of industry and travel. It is urgently needed now for continuance of the war effort in extreme northern regions.

Transportation from the United States is a major undertaking, and much is hoped for from the potential oil areas of Alberta and the North-West Territories. For this reason, as well as for others, it is desirable that the history of Alberta's oil development, for which in the past there has been small need for an apology, may continue into the future with the same and even greater encouragement, so that the many objectives which now present themselves may be approached.

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